REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application.

The claims have been amended to correct minor formal issues identified during preparation of the present amendment.

The present invention is directed toward a data acquisition system for gathering geophysical data. The system includes at least one data acquisition unit that may be connected to a plurality of sensors and that is arranged to simultaneously gather geophysical data. The data acquisition unit includes time referencing means to generate time reference data that is used to control the time at which geophysical data samples are taken. The system also includes means for calculating spatial derivatives between simultaneous samples associated with adjacent sensors, with the spatial derivative calculating means being connected to the data acquisition unit.

As disclosed in the present application, for example from about page 19, lines 7-30, the spatial derivatives are equivalent to calculating the difference between simultaneous samples from adjacent sensors and dividing each difference value by the distance between the sensors. Such calculations of spatial derivatives may be taken between sensors disposed along a first line in a first direction, along a second line in a second direction orthogonal to the first line, and/or between sensors disposed generally diagonally relative to each other. Calculating spatial derivatives in this way is significant since it enables processed survey data to be obtained which is virtually free of noise caused by atmospheric discharges, telluric currents, and the

like. It is submitted that none of the prior art teach or suggest such means for calculating spatial derivatives.

Claims 63-68, 71-74, 76, 79-86, 88-93, 95-101, 103-109, 111-113, 115-117, 120-125 stand rejected as being anticipated by US 6,191,587 to Fox.

Fox teaches a data acquisition system for geophysical surveys. However, there is no disclosure in Fox of calculating spatial derivatives between simultaneous samples associated with adjacent sensors. The Examiner refers to Col. 12, lines 29-38 of Fox as disclosing the spatial derivative calculation as required by claim 1. However, this portion of Fox describes simultaneously measuring electric and magnetic fields, which is unrelated to the claimed spatial derivative calculation. Upon review of Fox, it is submitted that there is no description or suggestion of the claimed special derivative calculating means. Accordingly, insofar as Fox fails to teach every element of claim 1, it is considered apparent that the rejection of claim 1, and the claims dependent thereon, based upon Fox is overcome. It is further noted that these same arguments are applicable to independent claims 100 and 125, each or which include limitations directed toward calculation of spatial derivatives. Thus, reconsideration and withdrawal of the rejections based upon Fox is hereby requested.

Claims 69-70, 75, 77-78, 87, 94, 102, 110, 114, and 118-119 stand rejected under 35 SU as being unpatentable over Fox in view of US 6,801,473 to Matteucci et al. It is respectfully submitted that Matteucci fails to disclose or suggest the method or apparatus for calculation of spatial derivatives. Insofar as this same feature is lacking in Fox, it is considered apparent that the proposed combination of Fox and Matteucci will necessarily also fail to provide this feature. Accordingly, the

Examiner has failed to establish a prima facie case of obviousness, and the rejections based upon this proposed combination should be withdrawn.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. GRF-15791.

Respectfully submitted,

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